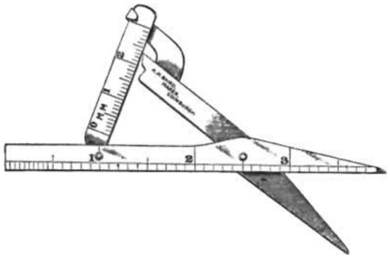
independent tradition of the Futuna islanders of an incident said by the Tongans to have occurred on that island during the same expedition. Whatever a critical examination of these traditions may yield, there is one caution to be observed. The Polynesians have an unusual facility for the preservation of quasi-historical memories. Their genealogies go back for many more generations than those of most other savages; and it is impossible to generalise from their example as to the historical value of the traditions of other races. Even their retention of the memory of events is capricious. The Niuéans have preserved a mimicry of the rite of circumcision, which renders it obvious that they once practised the rite in real earnest, like other South Sea islanders; but they have no tradition of how, or why, or when they abandoned it. The ceremony in question is curious, and, as Mr. Thomson says, probably unique. It is worth further inquiry. Lastly, the sacredness of animals, which is here noticed as a suggestion of totemism, is a clue to be followed up. There is nothing in the information given by Mr. Thomson pointing directly to totemism. But the wish, at which he hints, that Polynesian folklore should be systematically collected in all the islands, and compared, is one that every anthropologist will echo. If this were done, whether totemism were discovered or not, much would be discovered of importance to science, and something perhaps of not a little utility for the administration by European Powers of those outlying portions of their Empires.

The book is written with Mr. Thomson's accustomed gaiety. It contains a number of plates from photographs, of which the one here reproduced, by the courtesy of the publisher, shows a Tongan grave-mound of coral, white sand and polished black pebbles, together with the garlands worn by friends and suspended above it as a mark of their affection. Is the word "surplus" on p. 163 a misprint, or a joke?

E. SIDNEY HARTLAND.

KEW MICROMETER.

ALL botanists, entomologists and others who have to deal frequently with the minute measurements of parts of the object they examine must have felt the inconvenience of the double measurement involved in the use of compasses and measuring rule. The instrument of which we give a figure has been named the Kew Micrometer, and has been devised by Sir Joseph Hooker to remove this inconvenience.



The construction will be evident on reference to the figure. By a simple adjustment of a scale to one arm of the micrometer, the length of an object is recorded up to a fraction and can be read off at leisure. One side of the scale is graduated to millimetres, the other to inches. For work under a microscope there is great advantage in the use of an instrument of this kind, for a measurement may be recorded and a dissection proceeded with without lifting the eye from the eyepiece of the instrument. Another useful feature of the micrometer is that the graduation to inches and millimetres on opposite sides of the scale furnishes a ready means of turning the one scale into the other without calculation, and this is a matter of some moment at the present time, when the two scales are in use in several countries. The length of the arm of the micrometer is exactly four inches, and this is graduated to tenths of inches and can therefore be used for larger measurements.

The instrument is a small and handy one, and can be easily carried in a sheath in the waistcoat pocket; it supplies a real want. Mr. Baird, scientific instrument maker in Edinburgh, is the maker of the instrument.

NOTES.

THE preliminary programme of the meeting of the German Association of Naturalists and Physicians to be held at Carlsbad in September has been prepared. On Sunday, September 21, the various committees will meet to transact the preliminary business in the forenoon, and the rest of the day will be devoted to social gatherings. Of the seventy-four meetings this will be the second visit paid to Carlsbad, the first occasion having been forty years ago. Prof. Dr. Heubner, of Berlin, is the president for this year, with Prof. Dr. van 't Hoff, of Charlottenburg, and Prof. Dr. Chiari, of Prague, as vice-presidents. On September 22 the work of the meeting will commence after an address of welcome to the general body, when Hoffmeister, of Strasburg, will deliver an address "On the Molecular Construction of White of Egg"; Weber, of Amsterdam, on "The Early History of the Malay Archipelago"; and Voller, of Hamburg, on "The Origin and System of Wireless Telegraphy." In connection with the last-mentioned, there will be during the week opportunities for the members to study the Slaby and Braun system, practical illustrations of which will be supplied by the General Electrical Co., of Berlin, and the Wireless Telegraphy Co. (Braun and Siemens-Halske system), of Berlin. On Wednesday morning the sections again unite to be addressed by Suess, of Vienna, "On the Nature of Hot Springs"; by Meyerhoffer, of Berlin, on "The Chemico-physical Constituents of Medical Springs"; and by Ruff, of Carlsbad, on "David Becher, the 'Carlsbad Hippocrates,' 1725–1792." At another general meeting on Friday morning lectures will be delivered by Baron von Eiselsberg on "The Importance of the Thyroid Gland in the Economy of Nature"; by von Wettstein on "Neo-Lamarckisms"; and by von Miller on "The Forces of Nature in the Service of Electricity." At the meetings of the 28 sections, the communications promised cover every field of investigation in natural science and medical and surgical practice, some hundreds of papers in all. On the scientific side they range up to 18 in the mathematical, astronomical and geodesy section, and 29 in the chemistry section, while on the medical side they range up to 60 in the surgical section. The closing meeting will be on Friday, September 25. Everything is being done by the ten local sub-committees to render the week a pleasant one for visitors, the Entertainments Committee having made a complete arrangement of concerts, theatricals, dinners and excursions to occupy the whole of the spare time.

PROF. D. J. CUNNINGHAM, F.R.S., has accepted the invitation of the Anthropological Institute of Great Britain and Ireland to deliver the third annual Huxley memorial lecture, the date fixed being October 21. He has chosen for his subject "Right-Handedness and Left-Brainedness."

THE San Francisco correspondent of the *Daily Mail* reports that the people of Santa Barbara, a county of southern California, are terror-stricken owing to the increasing frequency and severity of the earthquake shocks, of which there were seventyfive from July 27-31. The most destructive was that at the town of Los Alamos, at 1.20 a.m. on July 31. All the brick buildings were thrown to the ground, but the frame buildings generally escaped serious injury except to their windows. Not a chimney has been left standing. The shock lasted thirty seconds, and seems to have had a spiral motion. Goods were hurled from the shelves of the stores and piled in the middle of the rooms; even heavy desks were tossed about. The inhabitants ran into the streets in a panic, for in the morning between 7.25 and 7.30 there were three additional shocks, and just before nine two more. It is also reported that there were four severe shocks of earthquake in Los Alamos Valley on August 1. Several buildings which had survived the earlier shocks were badly cracked, and an immense structure near Los Alamos was turned partly round on its foundations. The earth continues to tremble at intervals, and the countryside is said to be changing appearance. A Reuter telegram from Leiria, Portugal, states that a violent earthquake shock was felt there at midnight on August 3 and was renewed at 6.45 a.m. on August 4. One shock was felt throughout the centre of Portugal and on the seaboard. The Central Meteorological Bureau of Italy announces that a severe earthquake shock was felt at Carrara at 11.35 p.m. on Monday, August 4. It was followed by two more shocks. Another earthquake shock is reported from Massa. The seismographs at Siena, Florence, Padua, Rome and Rocca di Papa also registered disturbances.

IN the House of Commons on Monday, the decision to close the observatories at Ben Nevis and Fort William was again brought forward, and the First Lord of the Treasury was asked whether he would order an inquiry to be made into the distribution by the Meteorological Council of the annual grant of 15,300*l.*, so as to secure that an adequate allowance be made to these observatories. In his reply, Mr. Balfour referred to an inquiry held about twenty years ago, at the close of which the committee recommended that the inquiry should be repeated from time to time, a recommendation that has not been followed. In the circumstances he thought it would be right to have an investigation and to repeat it from time to time. This would involve no slur or slight on the scientific committee which allocates the funds.

A COPY of the remarks made upon the subject of the Ben Nevis observatories by Sir Arthur Mitchell, honorary secretary of the Scottish Meteorological Society and of the directors of the Ben Nevis observatories, at the meeting of the Society on July 23, has been received. It is pointed out in this statement that the importance of observations at a high level is emphatically and increasingly recognised in the countries of Europe and in the United States of America. Both the high- and low-level observatories at Ben Nevis have been, all through their existence, under the sole management and control of the directors, by whom they were erected and to whom they belong. Having high-level observations to compare with suitably associated observations at sea level has a direct bearing on the study of meteorology broadly; but it is also and everywhere held that the possession of such observations may be reasonably expected to assist directly in weather forecasting. The directors started in 1883 with the intention of performing a big and costly experiment in atmospheric physics, which, in their opinion, ought to cover a sun-spot period, that is, from eleven to twelve years. This experiment they have been able to complete by the aid of public generosity. For the first seven years after 1883, when the observatory at the top of Ben Nevis was opened, there were no hourly observations at sea level for purposes of comparison, so that the experiment began in a complete form only twelve years ago, in 1890, when the low-level observatory at Fort-William was also opened.

THE Museum of Practical Geology, Jermyn Street, will be closed as usual from to-morrow evening, August 8, until the morning of September 10.

THE Reale Accademia dei Lincei has conferred on Mr. Marconi a special prize of ten thousand francs under the Santoro foundation in recognition of his work in connection with wireless telegraphy.

THE Bisset Hawkins gold medal of the Royal College of Physicians of London has been awarded to Dr. W. H. Power, F.R.S., principal medical officer to the Local Government Board. The medal was instituted in 1896 with the object of perpetuating the memory of the late Dr. Francis Bisset Hawkins, and is bestowed triennially on some duly qualified medical practitioner who has, during the preceding ten years, done good work in advancing sanitary science or in promoting public health. Dr. David Ferrier, F.R.S., will deliver the Harveian oration of the College on St. Luke's day, October 18. The Bradshaw lecture will be delivered in November by Dr. C. J. Cullingworth. Dr. A. S. F. Grünbaum has been appointed Goulstonian Lecturer and Dr. T. R. Glynn Lumleian lecturer for 1903, and Dr. J. R. Bradford the Croonian lecturer for 1904.

ON Friday last Sir Alfred Jones, chairman of the Liverpool School of Tropical Medicine, entertained at dinner the Duke of Northumberland and the Tropical Diseases Section of the British Medical Association, at the Adelphi Hotel, Liverpool. In proposing the health of the Duke of Northumberland, Sir Alfred Jones mentioned that a friend had given a donation of 25,000*l.* for the study of tropical medicine at the Liverpool School, and through the energy and perseverance of Prof. Boyce the School was being endowed with 10,000*l.* The Duke of Northumberland, in replying, said that he had been impressed with the importance of the efforts which were being made in the direction of ameliorating the conditions of tropical existence. In responding to the toast "Tropical Medicine," Sir W. Kynsey said it seemed extraordinary that in a wealthy country like England it was impossible to get a penny from Government for these schools, which had been entirely dependent upon private benevolence.

THE steamer *America*, with the whole of the Baldwin-Ziegler Arctic expedition, arrived on August 1 at Honningsvaag, in Northern Norway, and then proceeded to Tromsoe. Mr. Evelyn B. Baldwin, the leader of the expedition, reports as follows to Reuter's Agency:—"This year's work has been successful. An enormous depot of condensed foods has been established by sledge on Rudolf Land within sight of the Italian expedition's headquarters. A second depot has been formed in lat. 81 33, and a third depot at Kane Lodge, Greely Island, which has been newly charted as near the 81st degree of latitude. These large depots, together with the houses and stores left at Camp Ziegler, as well as provisions for the five ponies and 150 good dogs now on board, besides the pack itself, will afford means for a large Polar dash party next year. The fact that all the channels through Franz Josef Land remained blocked by ice during the autumn of 1901 prevented the establishment of depots by steamer last year. The breaking up of the ice early in June compelled us to use our reserve supply of coal, and hence our departure from Camp Ziegler on July 1 in order not to imperil the expedition. We dispatched 15 balloons with 300 messages in June. We have obtained the first moving pictures of Arctic life. We discovered Nansen's hut, recovering the original document left there and securing paintings of the hut. We have also secured marine collections for the National Museum, new charts, &c. Thirty men, with 13 ponies, 170 dogs and 60 sledges, were employed in field work from January 21 to May 21, this severe work resulting in the destruction of the sledges; this and the depletion of the food for the ponies and the dogs rendered a return imperative."

IN a paper read at the International Navigation Congress recently held at Dusseldorf, Mr. Gordon C. Thomas, C.E., gives a description of a novel kind of canal lift which he has recently constructed at Foxton, on the Grand Junction Canal, one of the most important arterial waterways in this country. At Foxton there is a rise of 75 feet, which used to be overcome by a flight of 10 locks, which could only take barges carrying 33 tons. The time occupied in passing a boat through these locks was 75 minutes, and 30,000 gallons of water were used for the purpose at each lockage. The increasing traffic necessitated some better means of raising and lowering the barges and decreasing the quantity of water required. For this purpose Mr. Thomas has recently constructed for the Canal Company a new system of elevation at a cost of 40,000*l*., by means of which the time occupied in raising and lowering the boats has been decreased to twelve minutes for one boat ascending and another descending as compared with an hour and a quarter for the passage of a single boat, the quantity of water used being only one-tenth of that required when the locks are used. The lift consists of an inclined plane connected with the higher and lower levels of the canal at an angle of 1 in 4. On this incline two docks, or iron troughs, 80 feet long, 15 feet wide and 5 feet deep are hauled up and down, the barges being first floated into or out of the docks from the canal, the ends of which are closed by gates made watertight. The troughs are hauled up sideways and the wheels on which they rest are so adjusted that the water in them always remains level. As one trough is drawn up, either loaded with a boat or empty, except as to the water, the other descends. This lift is capable of passing 200 canal boats in twelve hours, and can be managed by three men.

SIGNOR FILIPPO EREDIA has published in the *Atti* of the Royal Academy of Acireale some interesting statistics in regard to the rainfall of Sicily during the period 1880-1900. Considering the following ten stations, Palermo, Termini, Messina, Riposto, Catania, Syracuse, Mineo, Girgenti, Caltanisetta and Trapani, it is found that if the twelve months of the year be arranged in descending order of their average rainfalls, the five least rainy months at each station occur in the order September, May, August, June, July. The most rainy month is November for Messina, Riposto, Catania and Trapani, and December for the other stations. The next in order is December for Messina and Trapani, November for Syracuse, Termini and Girgenti, and January for the other stations. October occurs fourth on the list for Palermo, Termini, Girgenti and Syracuse; it is the third for Messina and Trapani, fifth for Riposto and Catania, and still lower down for Mineo and Caltanisetta. February is fifth on the list for Palermo, Termini, Messina, Trapani and Syracuse, fourth for Catania, Mineo and Caltanisetta and third for Riposto. Finally, March and April occupy the sixth and seventh places at all stations except Girgenti, Mineo and Caltanisetta.

THE director of the International Bureau of Weights and Measures, at Paris, has recently issued a further volume of he *Travaux et Mémoires* of the Bureau (vol. xii., 338 pp.; Paris: Gauthier-Villars.) This volume deals with (1) the determination in 1894-5 of the length of the yard in terms of the metre; (2) with the verification in 1890-7 of standard end-measures (mètres à bouts); and (3) with a comparison of platinum and gas thermometers. The volume also contains a reprint of the "Compte rendus des Séances" of the three general conferences on weights and measures which were held at Paris in 1889, 1895 and 1901, to the last of which reference has been recently made in our columns. The comparisons of the yard and metre, and the verification of the end-metres (1) (2), are now almost ancient history, and the important results obtained in 1895 and 1897 have been duly recognised in this country. A full and interesting report is made on the comparisons of platinum, gas and mercurial thermometers by Dr. J. A. Harker and Dr. P. Chappuis (3). The results of their researches have, however, been already published in London (*Phil. Trans.* Roy. Soc., vol. cxciv. pp. 37-134, 1900). Prof. Callendar's method of measuring temperatures based on the determination of the electrical resistance of a platinum wire, has been extended to a comparison at the Bureau of the platinum thermometer with the nitrogen thermometer (now adopted as the international standard thermometer) at temperatures varying from 80° to 460° C. A comparison was also made between the platinum and the mercurial thermometers at lower temperatures, all the comparisons having been made under the direction of Dr. Benoit. These comparisons were originally proposed by the Kew Observatory Committee, and the numerous formulæ as well as the results are clearly set out in appendices to the report.

THE explosion of a charge of about ten tons of gunpowder in connection with blasting operations in the granite quarries near Baveno (Lago Maggiore) has afforded Dr. Emilio Oddone an opportunity for making a series of observations of interest in connection with seismology, and the results are described in a paper communicated to the Istituto Lombardo in May last. The charge was fired on October 30, 1901, and Dr. Oddone made observations in a hut distant about 1¼ kilometres to the north of the mines, using a seismometer for horizontal motions, an apparatus for determining the relative motion in a radial direction of two points three metres distant, a variometer for the aërial disturbances, an aneroid and a chronometer. To calculate the velocity of propagation, observations were made at 7, 10 and 20 kilometres, and also with the instruments at Pavia, Milan, Turin and Padua. The indications of the seismograph showed initially a solitary wave of amplitude 0·1 millimetre, but in consequence of the rock subsequently breaking off in five pieces this was followed by subsidiary waves. The variometer indicated an instantaneous variation of atmospheric pressure of about 1/24 millimetre of mercury. The distant observations gave negative results; at Baveno, 7 kilometres distant, no earth tremors were noticed, and even the sound of the explosion hardly reached 15 kilometres. A calculation of the total energy dissipated by the waves across a hemispherical surface of radius 1500 metres about the hypocentre gives $1{\cdot}4 \times 10^7$ kilogrammetres, the total energy set free by the combustion of the powder being $2{\cdot}584 \times 10^9$ kilogrammetres. It appears, however, probable that about 92 per cent. of the elastic energy was absorbed at a distance of 1500 metres, and this absorption Dr. Oddone attributes to the viscosity of the granite. The same cause accounts for the absence of any observed earth tremors a t the distant stations, which made it impossible to calculate the velocity of wave propagation. At the same time, an explosion high up on a mountain at the side of a deep lake hardly appears to be favourably placed for sending earth-tremors to a long distance.

A BEAUTIFULLY illustrated pamphlet, by Mr. C. Dixon, issued by Ross, Ltd., of New Bond Street, describes the advantages of Ross's prism field-glasses to the out-of-doors naturalist.

NUMBER ix. of the L.M.B.C. *Memoirs*, by Mr. O. V. Darbishire, is devoted to a full account of the natural history of Chondrus, or "Irish moss." At the conclusion of his memoir the author deplores the want of a thoroughly trustworthy and up-to-date work on British sea-weeds.

THE August number of the *Contemporary Review* contains an interesting article on bird-life by Mr. Digby Pigott, in which the author draws special attention to the beautiful preparations in the Natural History Museum illustrative of the arrangement of the feathers in the wing.

THE *Journal* of the Straits Branch of the Royal Asiatic Society for January contains a long paper on Sarawak Hymenoptera, by Mr. P. Cameron, largely based on the collection made by Mr. R. Shelford. Since the report in 1857 on Dr. Wallace's collection very little work has been done on this subject, and the author is enabled to record a number of new generic and specific types.

THE contents of the July number of the *American Naturalist* include a paper on the gastrulation of the egg of the toad *Bufo lentiginosus*, by Miss H. D. King, and another, by Mr. W. A. Hilton, on the sense-hairs of caterpillars. In the latter the author states that the majority of the body-hairs of these larvæ are sensory, and that almost the only mode in which sensory nerves terminate on the bodies of insects is by means of hairs.

IN the July issue of the *Journal of Anatomy and Physiology*, Dr. H. W. M. Tims discusses the intricate question of the homology of certain deciduous and permanent cheek-teeth in mammals, in the course of which he disputes the view that the functional teeth of marsupials belong to the deciduous series. In the same number Mr. Elliot Smith describes the manner in which the desiccated brain is preserved in many Egyptian human skulls, other than those of mummies, and Prof. F. G. Parsons figures some of the leading modifications of the aortic arch in mammals.

THREE interesting instances of abnormality in mammals are recorded in journals received during the past week. In the *American Naturalist* for July Mr. F. Howe discusses the nature of the polydactylism in a breed of cats kept at Cambridge, Mass. It is concluded that the polydactylism lends no support to the theory of reversion to a six- or seven-toed ancestral type, the only definite statement possible being that three digits are developed where there are normally but two. In the *Journal of Anatomy and Physiology* for the same month Prof. O. C. Bradley records the occurrence of seven cheek-teeth, exclusive of the deciduous first premolar, in a horse, while Mr. Elliot Smith mentions an ancient Egyptian skull with an additional incisor. Mr. Smith, from his specimen, suggests that the missing incisor in man is *i.* 1, and not *i.* 2, as Tomes believes to be the case. It may be pointed out that Lydekker suggested the missing tooth to be *i.* 2 in 1884, or fourteen years earlier than the work of Tomes cited by the author.

AT the conclusion of some notes in the *Proceedings* of the Philadelphia Academy on the so-called flying-lemur (*Galeopithecus volans*), a creature usually regarded by naturalists as an aberrant member of the Insectivora, Dr. H. C. Chapman sums up as follows :—"It appears, at least in the judgment of the author, that Galeopithecus cannot be regarded as being either a lemur, or insectivore or bat, but that it stands alone, the sole representative of an ancient order, Galeopithecidæ, as Hyrax does of Hyracoidea. While Galeopithecus is but remotely related to the Lemuroidea and Insectivora, it is so closely related to Chiroptera, more particularly in regard to the structure of its patagium, brain, alimentary canal, genito-urinal apparatus, &c., that there can be but little doubt that the Chiroptera are the descendants of Galeopithecus, or more probable that both are the descendants of a Galeopithecus-like ancestor."

IN a valuable series of observations on living brachiopods contributed to the *Memoirs* of the Boston Natural History Society (vol. v. No. 8), Prof. E. S. Morse quotes with approbation a note from NATURE of July 13, 1899, based on Prof. J. A. Thomson's inaugural address at Aberdeen, on the importance of "nature-study," and he gives as one of the reasons for publishing his observations, which were made twenty years ago, our lack of knowledge of the habits of living brachiopods. It is not that these animals cannot be easily kept in confinement, as Prof. Morse states that in the middle of summer he transported a series of specimens a distance of 700 miles in a small bowl. In this connection it is interesting to note that from its vitality in such unfavourable circumstances Prof. Morse was led to suggest that the long persistence of Lingula might be accounted for. A few weeks ago we chronicled the very same suggestion made by Mr. N. Yatsu, of Tokio. The memoir is illustrated by twenty beautifully executed plates, of which the first is coloured.

WE have received the Report of the American Museum of Natural History for 1901, containing a full account of the rapid progress made by that institution and of the various expeditions which have been equipped by private persons for its enrichment. Among the latter is the Jesup expedition to the North Pacific, which has resulted in the acquisition of a mass of material illustrating the life of the Chukchi's of the extreme north-east of Siberia. The cost of publishing the results of this and other expeditions has become a somewhat serious difficulty. "It does not seem proper," says the Report, "to ask those who have generously placed parties in the field also to provide the funds for publishing the scientific results of their investigations; on the other hand, the general funds of the Museum are not sufficient to meet the obligation." As usual, the Report is well illustrated. A plate of the new "auditorium," with its benches crowded with attentive listeners, illustrates a phase of museum development unknown in our own metropolis. Among other illustrations is one of a group of guillemots and gulls mounted in the Museum in imitation of their natural surroundings. A second displays a remarkably fine skeleton of a fish-lizard (Ichthyosaurus) containing numerous young skeletons within the ribs, recently acquired by exchange with the Stuttgart Museum. Other plates are devoted to ethnographical specimens.

A FORTNIGHT'S cruise in the North Sea was made recently by the Norwegian Government's research steamer *Michael Sars*. The first week was spent in a series of studies on the distribution of animal life at various depths on "Storeggen" and "Shetlandseggen," which are great submarine ridges with sloping sides. With a 50-feet trawl dredgings were made down to a depth of 600 fathoms to ascertain the distribution at various depths of the fishes used for food. A sharply defined boundary manifested itself between the distribution of the food-fishes and the deep-sea forms of life, and this boundary coincides with a rapid transition from water of a higher temperature to water just above or at the freezing point. This boundary occurs on the slope of the Shetland ridge, at a depth of between 275 and 300 fathoms. A series of studies was next undertaken on the steep north-east slope of the Faero bank. Here, so far as is known, no accurate soundings had been previously taken and no fishing carried on either here or upon the great ridge or upon the Shetland ridge. A series of soundings was made, which do not correspond with those given on the British charts. Experimental fishings were carried on for three days with most satisfactory results; nine lines were cast, with a total of 5500 hooks attached to them, of which 660 were halibut hooks; and the catches consisted of 117 halibut weighing more than 5000 kilos., 300 large cod, 500 brosme, 10 common ling and 80 blue ling. This result is of interest, as it points to a new and important area for sea-fishery and to the existence of large quantities of halibut at a time of the year when it is not to be found on the great bank or ridge on the coast of Norway, and the same applies to the cod also. Both cod and halibut had herrings in their stomachs, although the catch was made at a depth of 200 fathoms. The work was carried out under the personal supervision of Dr. Johan Hjort.

ATTENTION was directed in NATURE for April 3 to a memoir by Prof. Yoshiwara on the geology of the Japanese islands which form the "Riukiu Curve." We have since received a report on the fossils of these islands and of Formosa, by Mr. R. B. Newton and Mr. R. Holland (*Journ.* Coll. Science, Tokyo, Japan, vol. xvii. 1902). The specimens comprise many examples of Orbitoides and other foraminifera, together with one or two species of Cellepora and one nullipore. They occur in the Orbitoidal-limestone of Miocene age, and in the raised coral-reef formations which belong to some part of the post-Pliocene series.

A SECOND and enlarged edition of the "Hand-List of Herbaceous Plants" cultivated in the Royal Botanic Gardens at Kew has been issued. In the preface it is pointed out that no substitute for the "Students' Garden"—the site of which was required for the new wing of the herbarium—is contemplated, more especially since the Botanic Gardens at Chelsea have been reconstituted under the auspices of the Charity Commissioners to serve a similar purpose. A new feature in this edition is a reference to works in which figures of the species may be found.

OF the various subjects reviewed by Mr. J. H. Maiden in his presidential address to the Linnean Society of New South Wales, the forestry question and a botanical survey of the country are topics on which the opinion expressed is that of an indefatigable worker and a practical expert. In connection with the State management of forests, Mr. Maiden directs attention to the importance of conserving areas which are not suited to agriculture, and to the necessity for planting trees to check the sand-drifts and to provide shade on the arid western plains. The object of the botanical survey would be to summarise existing records and extend them. In order to institute a survey which shall be carried on by independent workers, the delimitation of the country into areas, whether known as *domaines* or *counties*, is essential; otherwise a definite basis for concerted action is wanting. A tentative scheme of botanical counties is outlined in a chart which accompanies the paper.

WE have received two papers dealing with insects harmful to agriculture, horticulture, &c., the one, by Mr. G. H. Carpenter, on injurious insects observed in Ireland in 1901 (*Economic Proceedings* of the Royal Dublin Society, vol. i. part 3, No. 5), the other by Signor A. Berlese, entitled "Importanza nella Economia Agraria degli Insetti Endofagi," published in *Bolletino* No. 4 of the Royal College of Agriculture of Portici, Sicily. In the former Mr. Carpenter states that entomologists appear to have paid scarcely any attention to the maggots of flies which infest the bodies of live sheep, and he has therefore considered it advisable to describe in some detail the life-history of the sheep-fly (*Lucilia sericata*). It is somewhat remarkable that this infestation seems to be mainly confined to Great Britain and Ireland, having been recognised on the continent only in France and Holland; in the latter case, at any rate, there is good reason to believe that it was introduced from England. The author also records the occurrence of a "plague" of black ants of the Tropical American species *Iridomyrmex humilis* near Belfast in 1900. In the second communication Signor Berlese describes, with figures, the life-history of a number of deleterious insects met with in Sicily.

THE Maidu stock of north-eastern California contains some very primitive tribes, who, in their lack of clan organisation or totemic grouping, practical absence of clothing and other negative characteristics, recall the Seri Indians of the Gulf of California as set forth in the elaborate study by Dr. W. J. McGee (Seventh Annual Report of the Bureau of American Ethnology). Mr. Rowland B. Dixon, when on the Huntingdon California Expedition, made a large collection of Maidu myths, which he has recently published in the *Bulletin* of the American Museum of Natural History (vol. xvii. 1902, p. 33). The time has not yet come when these myths can be made to yield general conclusions, more field-work being necessary in other districts. When such material is available it will probably enable us to trace more accurately the lines of migration and the mutual relationships of the great mass of stocks scattered along the Pacific coast from the Columbia River to Mexico. These myths are beast-tales with, or without, a human element. The coyote is very prominent; he seems to be generally inimical to mankind, and appears often as a buffoon and trickster, who comes out of his adventures in a sorry plight.

GERMAN translations of Faraday's papers on experimental investigations in electricity, from the *Philosophical Transactions* of 1835 and 1838, are given in Nos. 126 and 128 of Ostwald's admirable series of scientific classics published by Mr. W. Engelmann, Leipzig. Dr. A. J. v. Oettingen is the editor of the volumes, and contributes a few remarks upon them. No. 125 of the same series, edited by Dr. F. G. Donnan, contains translations of John Mayow's papers on nitre, combustion and respiration, and No. 124 papers on thermodynamics by von Helmholtz, edited by Prof. Max Planck.

THE additions to the Zoological Society's Gardens during the past week include two Green Monkeys (*Cercopithecus callitrichus*) from West Africa, presented by Captain Hugo B. Burnaby; a Common Otter (*Lutra vulgaris*) British, presented by Mr. W. Radcliffe Saunders; a Common Seal (*Phoca vitulina*) from British Seas, presented by Mr. H. C. Rouch; three Mauge's Dasyures (*Dasyurus viverrinus*) from Australia, presented by Mr. Paris K. S. Foot; eight Rufous Tinamous (*Rhynchotus rufescens*) from Brazil, presented by Colonel Sir Thomas Hungerford Holdich; a Common Mynah (*Acridotheres tristis*) from India, presented by Mrs. Hope Robinson; a Greater Black-backed Gull (*Larus marinus*) European, presented by Mrs. V. H. Veley; a Yellow-eyed Babbler (*Pyctorhis sinensis*), two Striated Babblers (*Argya earlii*), two Himalayan Black Bulbuls (*Hypsiptes psaroides*), three Rufous-bellied Bulbuls (*Hypsiptes maclellandi*), a Verditer Flycatcher (*Stoparola melanops*) from British India, presented by Mr. E. W. Harper; a Rough-scaled Lizard (*Zonurus cordylus*), a Spotted Gecko (*Pachydactylus maculatus*) from South Africa, presented by Mr. R. Broome; six Menopomas (*Crypotobranchus alleghaniensis*), four Menobranchs (*Necturus maculatus*), a Blue Lizard (*Gerrhonotus coeruleus*), a Spiny-tailed Mastigure (*Uromastix acanthinurus*), four Horned Lizards (*Phrynosoma cornutum*) from North America, deposited; a Bennett's Wallaby (*Macropus bennetti*), three Glossy Ibises (*Plegadis falcinellus*), three Jameson's Gulls (*Larus novae-hollandiae*), a Herring Gull (*Larus argentatus*) bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE SPECTROSCOPIC BINARY β CEPHEI.—In No. 5, vol. xv. of the *Astrophysical Journal*, Prof. Frost gives the results of his own and Mr. W. S. Adams's estimations of the radial velocity of β Cephei, reduced from ten spectrograms which these observers obtained between December 18, 1901, and May 24, 1902, with the Bruce spectrograph.

The results obtained by the two observers agree very well and indicate a radial velocity which varies from $-20{\cdot}3$ to $+11{\cdot}3$ km. It was expected that the period of variation would be found to be a long one, but two spectrograms obtained with an